

The opinion in support of the decision being entered today is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SARAH M. BRANDENBERGER
and DOUGLAS G. KEITHLEY

Appeal 2007-1652
Application 09/776,058
Technology Center 2600

Decided: July 31, 2007

Before JOSEPH L. DIXON, LANCE LEONARD BARRY,
and JOHN A. JEFFERY, *Administrative Patent Judges*.

JEFFERY, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 from the Examiner's rejection of claims 1-20. Claims 21-24 have been indicated as containing allowable subject matter (Br. 3; Final Rejection 12). We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

STATEMENT OF THE CASE

Appellants invented a digital camera that enables introducing filtering effects via software emulation. In one embodiment, the user can select a filter from a menu, adjust filter properties, and preview the filtered image. Filtering the image on the camera itself precludes the need for bulky optical filters or processing the image on an external computer.¹ Claim 1 is illustrative:

1. A digital camera comprising:

an optical lens system providing an optical image;

an image sensor sensing simultaneously multi-color pixel data corresponding to said optical image;

an input device configured to respond to a manual input selecting one of a plurality of image filters; and

a processor configured to process said pixel data in response to said selected image filter to provide filtered image data.

The Examiner relies on the following prior art references to show unpatentability:

Kim	US 6,137,532	Oct. 24, 2000
Safai	US 6,167,469	Dec. 26, 2000
Shiomi	US 6,650,361 B1	Nov. 18, 2003 (filed Dec. 16, 1998)
Anderson	US 6,683,649 B1	Jan. 27, 2004 (filed Dec. 31, 1998)

¹ See *generally* Specification 4:1-5:21.

1. Claims 1, 2, 4, 5, and 7-14 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Anderson in view of Kim.
2. Claims 15-20 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Kim in view of Anderson.
3. Claim 3 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Anderson in view of Kim and further in view of Shiomi.
4. Claim 6 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Anderson in view of Kim and further in view of Safai.

Rather than repeat the arguments of Appellants or the Examiner, we refer to the Briefs and the Answer for their respective details. In this decision, we have considered only those arguments actually made by Appellants. Arguments which Appellants could have made but did not make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

OPINION

Claims 1, 2, 4, 5, and 7-14

We first consider the Examiner's rejection of claims 1, 2, 4, 5, and 7-14 under 35 U.S.C. § 103(a) as unpatentable over Anderson in view of Kim. In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966).

Discussing the question of obviousness of a patent that claims a combination of known elements, *KSR Int'l v. Teleflex, Inc.*, 127 S. Ct. 1727, 82 USPQ2d 1395 (2007) explains:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, §103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Sakraida v. AG Pro, Inc.*, 425 U.S. 273, 189 USPQ 449 (1976)] and *Anderson's-Black Rock[, Inc. v. Pavement Salvage Co.]*, 396 U.S. 57, 163 USPQ 673 (1969)] are illustrative—a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

Id., 127 S. Ct. at 1740, 82 USPQ2d at 1396. If the claimed subject matter cannot be fairly characterized as involving the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement, a holding of obviousness can be based on a showing that “there was an apparent reason to combine the known elements in the fashion claimed.” *Id.*, 127 S. Ct. at 1740-41, 82 USPQ2d at 1396. Such a showing requires “some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. . . . [H]owever, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *Id.*, 127 S. Ct. at 1741, 82 USPQ2d at 1396 (quoting *In re Kahn*, 441 F.3d 977, 987, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006)).

If the Examiner's burden is met, the burden then shifts to the Appellants to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. *See In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

Regarding representative claim 1,² the Examiner's rejection essentially finds that Anderson discloses a digital camera with every claimed feature except for (1) an input device configured to respond to a manual input selecting one of plural image filters, and (2) a processor configured to process pixel data responsive to the selected image filter to provide filtered image data as claimed. The Examiner cites Kim as teaching such features and concludes that it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Anderson to provide such a filtering capability to enable editing the image to have a selected color, thus reducing the space needed to provide several color filter options (Answer 3-4).

Appellants argue that there is no motivation to combine Anderson with Kim as the combination would change a principle of operation of the prior art. Appellants contend that because the color and burst signals of Kim are analog signals, and Anderson teaches using digital signals, Anderson must be modified to use analog signals. In this regard, Appellants argue that values of digital data correspond to the hue in Anderson, but hue in Kim is determined by the phase difference between the analog color signal and

² Appellants argue claims 1, 2, 4, 5, and 7 together as a group. *See* Br. 5. Accordingly, we select claim 1 as representative. *See* 37 C.F.R. §41.37(c)(1)(vii).

burst signal. Appellants conclude that modifying Anderson with Kim would therefore change Anderson's principle of operation by requiring a phase difference between an analog color signal and burst signal to determine hue instead of a digital signal (Br. 5-6; Reply Br. 3-4).

The Examiner argues that there is ample motivation to combine the references. The Examiner adds that modifying Anderson with Kim would not change the principle of operation in Anderson since both references digitally process the image data (Answer 12).

Appellants also argue that the prior art does not disclose a processor configured to process pixel data responsive to the selected image filter to provide filtered image data as claimed. According to Appellants, Kim does not provide filtered image data, but rather (1) provides original color data (C1), or (2) terminates the original color data and generates new color data (C2) (Br. 6-7; Reply Br. 5).

The Examiner argues that Kim discloses a color filter device that is connected in parallel with color processor 117. According to the Examiner, image data processed by the color processor is used when no filtering is selected. When filtering is selected, however, the Examiner notes that image data is processed by controller 211 (i.e., a processor) which provides 'filtering effect color data' (C2) (Answer 13).

We will sustain the Examiner's rejection of representative claim 1. Anderson discloses a digital video camera that can capture and display both digital video and still images. The camera comprises an imaging device 110 including an image sensor, a computer 112, and a hardware user interface 114 that includes a display screen 140. Image frames are transferred from the imaging device 100 to the computer 112 for processing, storage, and

display on the hardware user interface 114 (Anderson, col. 4, ll. 4-30; Fig. 1).

In Anderson, the user can create a slideshow by navigating to a selected media object (e.g., image) and marking the object. Significantly, each media object can also be selectively edited before or after incorporation into the slideshow using the appropriate editor (Anderson, col. 8, l. 66–col. 9, l. 18; col. 13, ll. 45-48).

For example, images can be edited using image editing screen 420. As shown in Figure 12, the user can select a desired image editing function ('Contrast,' 'Brightness,' 'Color,' and 'Sharpen') by moving the target cursor to the item and selecting the "Choose" softkey 206a. In response, a menu or screen is displayed that shows modifiable parameters for the selected item. In addition, the editing screen displays a thumbnail image of the selected image 422 and a preview of the modified image 424 (Anderson, col. 13, l. 59–col. 14, l. 4; Fig. 12).

We find this selectable image editing functionality in Anderson fully meets an input device configured to respond to a manual input selecting one of multiple image filters as claimed. That is, each image editing function listed in the menu 402 provides, in effect, a selectable filtering effect (i.e., a selectable "image filter" as claimed) since the function effectively modifies the image's appearance in accordance with the selected function. In fact, two of Anderson's editing functions ('Color' and 'Sharpen') are commensurate with filtering effects discussed in Appellants' own Specification.³ Moreover, the

³ See, e.g., Specification, at 3:15-22 (noting that image processing software packages can include various selectable filtering effects including, among other things, image *color* enhancement and *sharpening*) (emphasis added);

image's pixel data is processed in accordance with the selected function and displayed accordingly at least as a preview image (i.e., filtered image data is provided).

For at least these reasons, we find all limitations of representative claim 1 fully met by Anderson. Similarly, we find the limitations of claim 8 also fully met since this capability discussed above likewise performs an adjustment of the properties of the digital visual recording device to include selected filter effects as claimed.

Kim, too, fully meets representative claim 1. Kim discloses a digital camera with a selectable color filter device that operates in conjunction with a color processor 117 such that either color signal C1 from color processor 117 or color signal C2 originating from the color filter device (but not both) is mixed with luminance signal Y via mixer 120 for video output. Specifically, when the color filter function is not selected, selector 215 transmits the color data C1 from color processor 117 corresponding to a received video signal. If the color filter function is selected, however, selector 215 transmits the color data C2 selected by the user via color selection key 222. In so doing, color data C1 of the received video signal is terminated (Kim, col. 3, l. 62–col. 4, l. 10; Figs. 1 and 2). The user-selected color signal C2 is then mixed with luminance signal Y (Kim, col. 3, ll. 39-44).

To generate color data C2, the color filter device utilizes data that is stored in color memory 213. Color memory has a look-up table for generating a color sub-carrier (Kim, col. 3, ll. 47-49). The look-up table is

see also id., at 5:19-21 and 5:28–6:2 (noting that filtering effects may include variations in color intensity).

determined by the color vector scope as shown in Figure 3 and generates color data corresponding to the phase of a burst signal (Kim, col. 3, ll. 17-19, 60-63; Fig. 3). As shown in that figure, various colors are expressed in terms of (1) a B-Y color difference signal, and (2) an R-Y color difference signal (Kim, col. 3, ll. 52-60; Fig. 3).

In our view, the user's ability to manually select a desired color using the color filter device fully meets an input device configured to respond to a manual input selecting one of multiple image filters as claimed. Because the selected color produces a color signal that -- when further processed and mixed with the luminance signal -- alters the appearance of the displayed image, the selected color reasonably constitutes an "image filter" as claimed. Moreover, this processed data that is used to ultimately alter the appearance of the displayed image reasonably constitutes "filtered image data."

For at least these reasons, we find all limitations of representative claim 1 fully met by Kim. Similarly, we find the limitations of claim 8 also fully met since the capability discussed above likewise performs an adjustment of the properties of the digital visual recording device to include selected filter effects as claimed.

Notwithstanding our findings above regarding Anderson and Kim each individually rendering claims 1 and 8 unpatentable, we also agree with the Examiner that the skilled artisan would have reasonably combined the references to arrive at the claimed invention.⁴ Although Kim teaches that hue is determined by the phase difference between a burst signal and color

⁴ See *In re Meyer*, 599 F.2d 1026, 1031, 202 USPQ 175, 179 (CCPA 1979) (noting that obviousness rejections can be based on references that happen to anticipate the claimed subject matter).

data of a video signal as Appellants indicate, generating the color signal C (either via the color processor 117 or user selection using the color filtering device) nonetheless involves generating and processing digital signals.

As shown in Figure 1 of Kim, signal processor 100 -- a system which comprises color processor 117 -- is located between (1) A/D converter 114 and (2) D/A converters 118, 119. Although not shown in Figure 1, the color filtering device is likewise located between the A/D and D/A converters since the color filtering device, like the color processor, generates color data that ultimately produces a color signal C in accordance with the user's selection. Although this color signal C is converted to an analog signal and mixed with luminance signal Y for video output, the reference nonetheless teaches providing a user-selectable color filter that will produce 'filtered image data' in the digital domain. The fact that the color data may relate in some way to the analog video signal⁵ does not, however, detract from the fundamental teaching that colors are selected in Kim using the color filtering device to provide 'filtered image data' in the digital domain.

We see no reason why the skilled artisan would not have applied a commensurate color selection feature in Anderson's system, particularly since color adjustment is one of the filter options on the image editing screen 420 in Fig. 12. Although Anderson does not detail the means used to adjust the color, the reference nevertheless indicates that once the user selects the desired editing function (e.g., "color"), a menu or screen is displayed showing modifiable parameters (Anderson, col. 13, l. 63--col. 14, l. 4; Fig. 12). In our

⁵ For example, Kim indicates that the color data corresponds to the phase of a burst signal (Kim, col. 2, ll. 60-62). Kim also notes that the phase difference between a burst signal and color data of a video signal represents hue (Kim, col. 3, ll. 19-20).

view, the skilled artisan would have reasonably relied on the teachings of Kim to provide a color adjustment capability in Anderson that would utilize, among other things, user-specified color data generated using a look-up table.

For at least these reasons, we will sustain the Examiner's rejection of claims 1, 2, 4, 5, and 7-14.

Claims 15-20

We next consider the Examiner's rejection of claims 15-20 under 35 U.S.C. § 103(a) as unpatentable over Kim in view of Anderson. Regarding representative claim 15,⁶ the Examiner's rejection essentially finds that Kim discloses every claimed feature except outputting and recording an image on an electronic media of the digital visual recording device that includes combined filtering effects. The Examiner cites Anderson as teaching this feature and concludes that it would have been obvious to one of ordinary skill in the art at the time of the invention to provide such a feature in Kim to enable the user to edit and view the image with a selected color without using a color filter (Answer 8-9).

Appellants essentially reiterate that there is no motivation to combine Anderson with Kim. According to Appellants, such a combination would change a principle of operation of Kim since, among other things, Anderson uses digital data to determine hue, but Kim determines hue via the phase difference between analog signals (Br. 8-9; Reply Br. 6-7).

⁶ Appellants argue claims 15-20 together as a group. *See* Br. 8-10. Accordingly, we select claim 15 as representative.

Appellants also argue that Kim does not teach selecting a first and second filter as claimed, but rather teaches a single selection of a desired color (Br. 9; Reply Br. 8). The Examiner argues that Kim's color selection key 222 allows the user to select first and second filters simultaneously by selecting a desired color represented in the color vector scope. According to the Examiner, each color stored in memory represents the original image data with the combined filtering effect of (1) a "first filter" with a B-Y color filtering effect, and (2) a "second filter" with an R-Y color filtering effect (Answer 15).

We will sustain the Examiner's rejection of representative claim 15 essentially for the reasons stated by the Examiner. First, we find ample motivation on this record for the skilled artisan to combine Kim and Anderson for the reasons previously discussed.⁷

Second, we agree with the Examiner that each color difference signal (i.e., B-Y and R-Y) in Kim reasonably constitutes a "filter" giving the term its broadest reasonable interpretation. These respective color difference signals essentially dictate the stored colors.

As shown in Figure 3, each stored color is represented in terms of these color difference signals. That is, each color essentially is the result of combined effect of both color difference signals. Therefore, selecting a desired color would, in effect, entail "selecting" both color difference signals and simultaneously combining their effects to obtain the desired color.

We therefore find the Examiner's interpretation reasonable. Accordingly, we will sustain the Examiner's rejection of representative claim 15 and claims 16-20 which fall with claim 15.

⁷ See p. 9-11, *supra*, of this opinion.

Claims 3 and 6

We will also sustain the Examiner's rejections under 35 U.S.C. §103(a) of (1) claim 3 over the teachings of Anderson in view of Kim and further in view of Shiomi, and (2) claim 6 over Anderson in view of Kim and further in view of Safai. We find that the Examiner has established at least a prima facie case of obviousness of those claims that Appellants have not persuasively rebutted. Specifically, the Examiner has (1) pointed out the teachings of Anderson and Kim, (2) noted the perceived differences between these references and the claimed invention, and (3) reasonably indicated how and why the references would have been modified to arrive at the claimed invention (Answer 10-12). Once the Examiner has satisfied the burden of presenting a prima facie case of obviousness, the burden then shifts to Appellants to present evidence or arguments that persuasively rebut the Examiner's prima facie case. Appellants did not persuasively rebut the Examiner's prima facie case of obviousness, but merely reiterated the arguments made in connection with claim 1 with respect to lack of motivation to combine the references and the failure of the prior art to disclose the limitations of claim 1 (Br. 10-12; Reply Br. 8-10). For the reasons previously discussed, however, the rejection is sustained.

DECISION

We have sustained the Examiner's rejections with respect to all claims on appeal. Therefore, the Examiner's decision rejecting claims 1-20 is affirmed.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P. O. Box 272400
Fort Collins, CO 80527-2400